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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/941,134	08/28/2001	Alan Roger Harper	506-073	5886

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06/18/2003

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EXAMINER

STAICOVICI, STEFAN

ART UNIT

PAPER NUMBER

1732

DATE MAILED: 06/18/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/941,134

Applicant(s)

HARPER, ALAN ROGER

Examiner

Stefan Staicovici

Art Unit

1732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 October 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☒ Claim(s) 3-5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) /
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCollum *et al.* (US Patent No. 6,143,215) in view of Lemelson (US Patent No. 4,120,922).

McCollum *et al.* ('215) teach the basic claimed process and apparatus for molding a composite product including, providing flexible mold members (200, 203) (mould elements) that form a mold plenum (mold cavity) therebetween, introducing a reinforcing material within said mold plenum, injecting a resin material from a source of resin (166) within said mold plenum to impregnate said reinforcing material, providing pressure sensors (198) to measure the pressure of the resin material acting upon said mold members forming said mold plenum (means for sensing distortion of mould element) and controlling the flow rate of said injected resin using a closed loop control system (see col. 7, lines 32-36 and 47-60, col. 8, lines 26-39 and Figure 5) (means for generating an output signal). It is submitted that the measured pressure on the flexible mold members represents a reading of a distortion of said flexible mold members because a fluid pressure acting on a flexible membrane is translated into a distortion of said flexible membrane that is measured by said sensors.

Regarding claims 1 and 2, although McCollum *et al.* ('215) teach measuring a mold pressure (distortion) and a closed loop control system to control a variety of process parameters, including flow rate, McCollum *et al.* ('215) does not specifically teach controlling the flow rate in a closed loop control system based on an output signal from a sensor (means for generating an output signal when a predetermined degree of distortion is sensed and controlling the rate at which the resin mix is introduced into the mold cavity based on said output signal). Lemelson ('922) teaches a closed loop process control system for an injection molding machine including, measuring the rate of flow of molten molding material into a mold cavity (means for generating an output signal when a predetermined degree of distortion is sensed), generating a feedback signal which is representative of said flow rate (output signal), and comparing said feedback signal with a reference command signal, generating a difference signal by bucking said feedback signal against said reference command signal and applying said difference signal to control a flow regulating means for regulating the flow of said molten molding material to said mold cavity (see col. 8, lines 10-27) (controlling the rate at which the resin mix is introduced into the mold cavity based on said output signal). Therefore, it would have been obvious for one of ordinary skill in the art to have controlled the resin flow rate as taught by Lemelson ('922) in the closed loop control system of McCollum *et al.* ('215) because, McCollum *et al.* ('215) specifically teach a closed loop control system to control a variety of process parameters, including flow rate, whereas Lemelson ('922) teaches a variety of advantages that a closed loop process control of the flow rate provides such as improved product characteristics (col. 2, lines 10-22). Further, it should be noted that both references

teach using sensors mounted to the mold cavity in an injection molding process (see col. 7, lines 49-52 of McCollum *et al.* ('215) and col. 7, lines 1-10 of Lemelson ('922) ).

#### ***Allowable Subject Matter***

3. Claims 3-5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

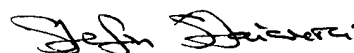
5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stefan Staicovici, Ph.D. whose telephone number is (703) 305-0396. The examiner can normally be reached on Monday-Friday 8:00 AM to 5:30 PM and alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard D. Crispino, can be reached at (703) 308-3853. The fax phone number for this Group is (703) 305-7718.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

Stefan Staicovici, PhD



Primary Examiner

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June 12, 2003